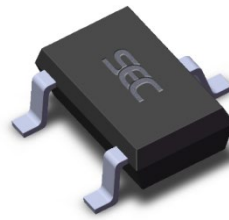
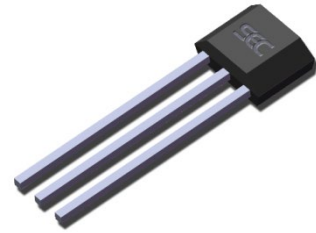


Features

- Miniature construction
- Low-Noise Output
- 2.5 V to 6.5 V Operation
- High stability
- High sensitivity
- Low power consumption
- Temperature range of -40 °C to 150 °C



3 pin SOT23 (suffix SO)



3 pin SIP (suffix UA)

Description

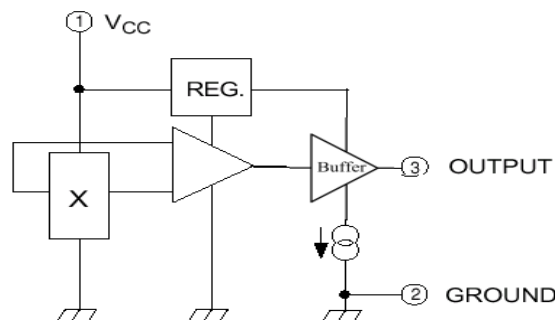
SS4815(Series)-R Linear Hall-effect sensor is small, versatile linear Hall-effect device that is operated by the magnetic field from a permanent magnet or an electromagnet. The linear sourcing output voltage is set by the supply voltage and varies in proportion to the strength of the magnetic field. In zero magnetic field condition, IC's output voltage is half of the power supply voltage. When the S pole come close to the IC's marking surface, the output voltage will decrease linearly with the increase of magnetic field strength. On the other hand

when the N pole come close to the IC's marking surface, the output voltage will increase linearly with the increase of magnetic field strength. SOT23 package is just the opposite. The integrated circuitry features low noise output, which makes it unnecessary to use external filtering. It also includes thin film resistors to provide increased temperature stability and accuracy. The linear Hall sensor has an operating temperature range of -40 °C to 150 °C appropriate for commercial, consumer and industrial environments.

Typical Applications

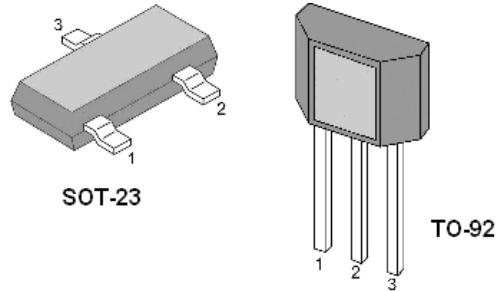
- Proximity detector
- Rotary encoder
- Motion Sensor
- Current sensor
- Position sensor

Functional Block Diagram



Pin Definitions and Descriptions

SOT Pin №	SIP Pin №	Name	Type	Function
1	1	V _{DD}	Supply	Supply Voltage pin
2	3	OUT	Output	Open Drain Output pin
3	2	GND	Ground	Ground pin



Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Supply Voltage	V _{CC}	7.0	V
Output Current	I _{OUT}	0.2	mA
Operating Temperature	T _A	-40 ~ 150	°C
Storage Temperature	T _S	-65 ~ 150	°C
ESD		±4	KV

Electrical Characteristics

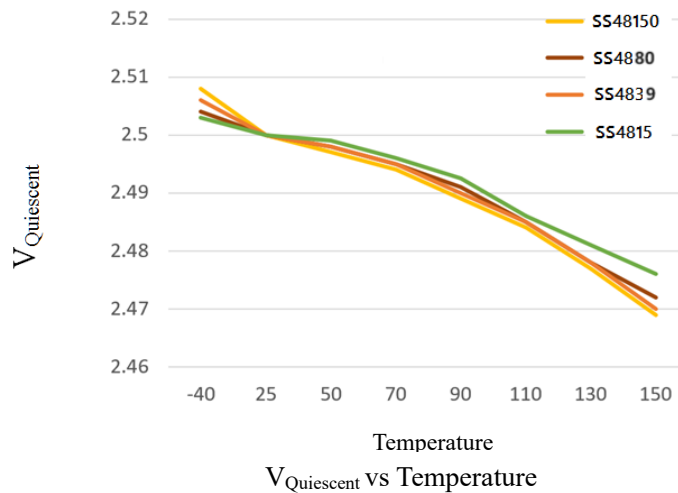
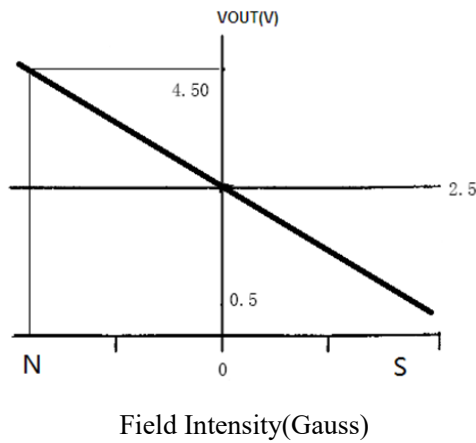
Operating Parameters T_A = 25°C, V_{CC} = 5.0 V

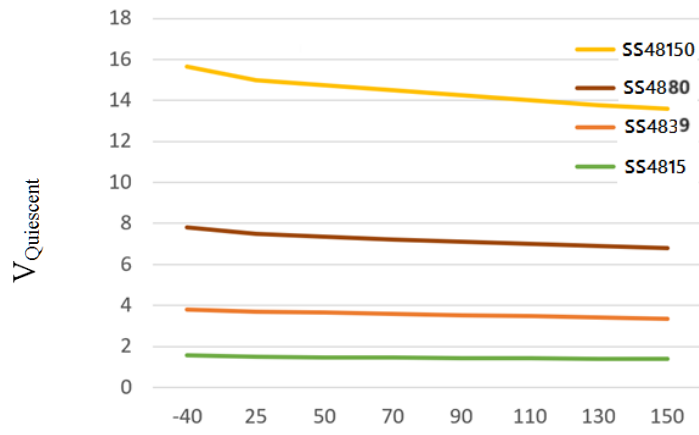
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Operating voltage	V _{CC}	Operating	2.5	5	6.5	V
Supply current	I _{CC}	V _{CC} = 5.0V B=0Gs		1.8	3.0	mA
		V _{CC} = 3.3V B=0Gs		1.4	2.0	mA
Output Resistor	R _O		50	85	120	Ω
Chopping frequency	F _C			6		KHz
Bandwidth	B _W			5		KHz
Noise	SS4815	V _{no} V _{CC} =5V		1.4		mV
	SS4839			2.4		
	SS4880			3.3		
	SS48150			4.8		
Min Output Voltage			0		0.1	V
Max Output Voltage			4.9		5	V

Magnetic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Quiescent Output Voltage	$V_{\text{Quiescent}}$	$B = 0\text{Gs}, V_{\text{CC}}=5\text{V}$	2.40		2.60	V
Sensitivity	SS4815	$T_A=25^\circ\text{C}, V_{\text{CC}}=3.3\text{V}$	1.2	1.5	1.8	mV/Gs
	SS4839		3.2	3.9	4.6	
	SS4880		7.0	8.0	9.0	
	SS48150		13	15	17	
Linearity	L_{IN}		-1.5		1.5	Range%
Temperature Error (Null Drift)		$T_A \geq 25^\circ\text{C}, V_{\text{CC}}=5\text{V}$	- 0.03		0.05	%/ $^\circ\text{C}$
Sensitivity Drift		$T_A \geq 25^\circ\text{C}, V_{\text{CC}}=5\text{V}$	-0.6		0.5	%/ $^\circ\text{C}$

Performance Characteristics

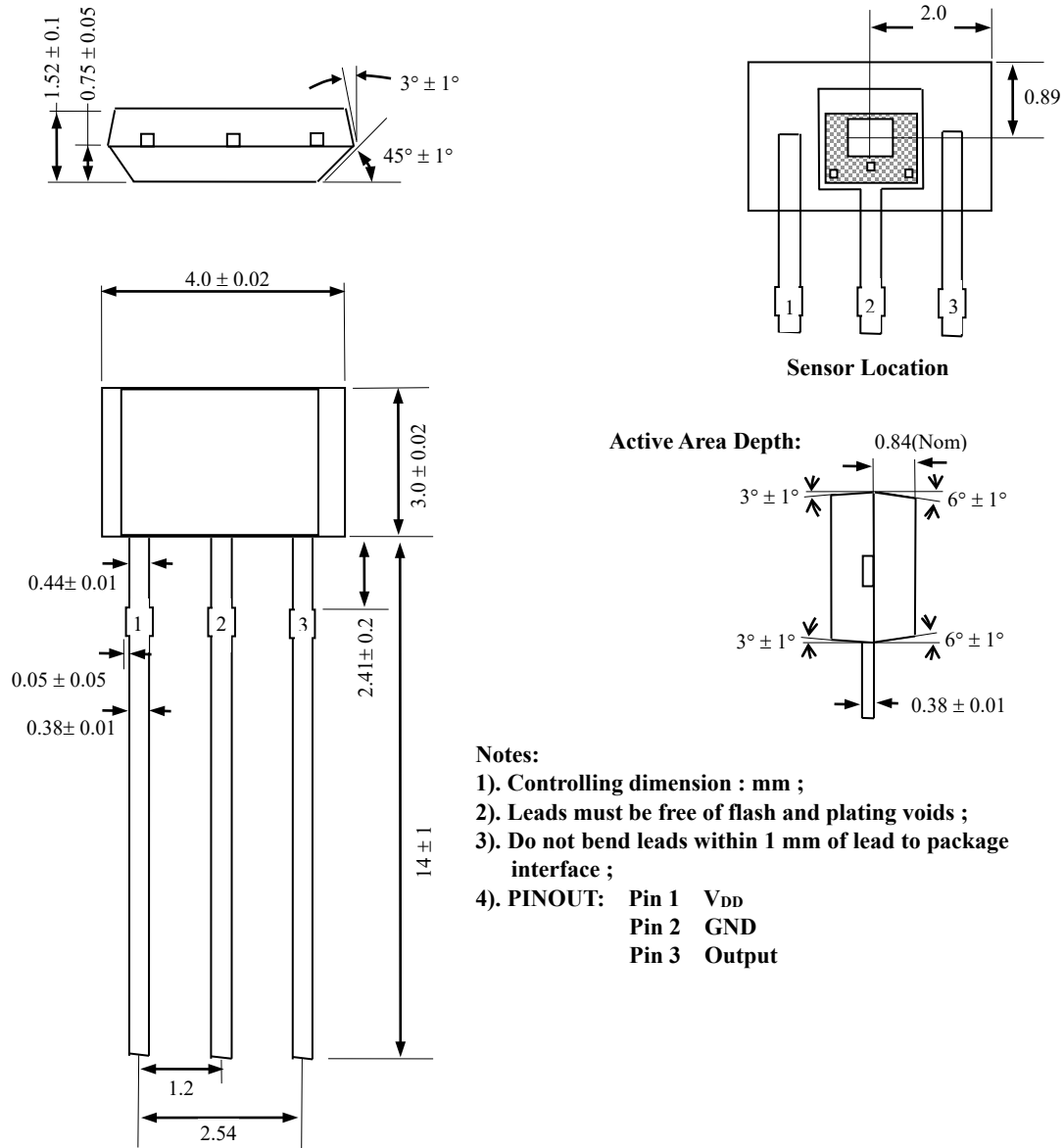




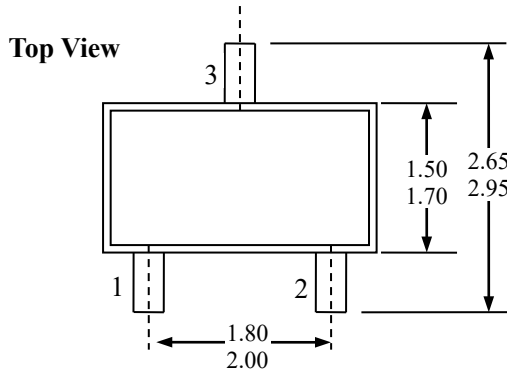
V_{Sens} vs Temperature

Package Information

Package UA, 3-Pin SIP:

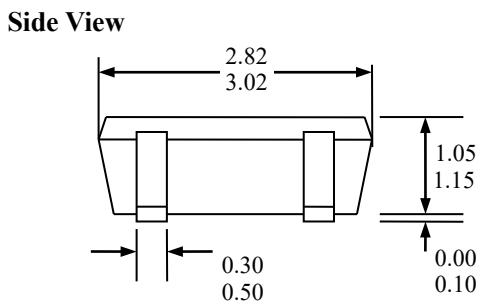


Package SO, 3-Pin SOT-23:

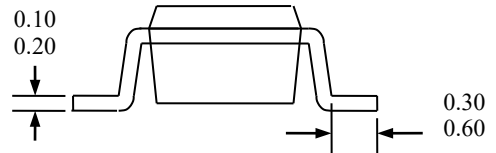


Notes:

- 1). PINOUT: Pin 1 V_{DD}
Pin 2 Output
Pin 3 GND
- 2). All dimensions are in millimeters ;

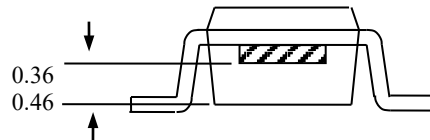
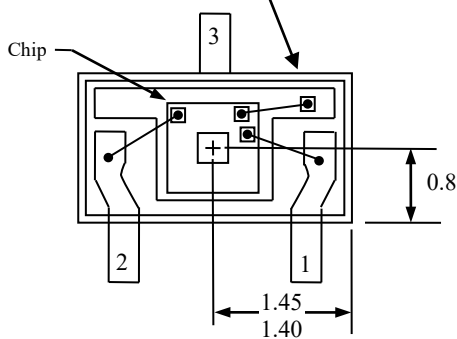


End View



SOT-23 Hall plate location

Bottom View of SOT-23 Package



Ordering Information

Part No.	Pb-free	Temperature Code	Package Code	Packing
SS4815(SERIES)-REUA	YES	-40°C to 85°C	TO-92	Bulk, 1000 pieces/bag
SS4815(SERIES)-RESOT	YES	-40°C to 85°C	SOT-23	7-in. reel, 3000 pieces/ reel
SS4815(SERIES)-RKUA	YES	-40°C to 125°C	TO-92	Bulk, 1000 pieces/bag
SS4815(SERIES)-RKSOT	YES	-40°C to 125°C	SOT-23	7-in. reel, 3000 pieces/ reel
SS4815(SERIES)-RLUA	YES	-40°C to 150°C	TO-92	Bulk, 1000 pieces/bag
SS4815(SERIES)-RLSOT	YES	-40°C to 150°C	SOT-23	7-in. reel, 3000 pieces/ reel